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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,679	06/06/2006	Klaus Hahn	12810-00267-US1	7403
23416	7590	10/27/2009	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ, LLP			NEGRELLI, KARA B	
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WILMINGTON, DE 19899			ART UNIT	PAPER NUMBER
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			10/27/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/581,679	HAHN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	KARA NEGRELLI	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 23 October 2009.
- 2a) This action is **FINAL**.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 and 10-17 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 7-9 and 18-23 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ .  | 6) <input type="checkbox"/> Other: _____ .                        |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Any rejections stated in the previous Office Action and not repeated below are withdrawn.
3. No new references have been applied to previously rejected claims. New rejections were necessitated by applicants' amendment which includes the addition of new claims 17-22. Claims 1-6 and 10-17 were withdrawn from consideration in a previous action and remain withdrawn.
4. It is noted that the newly introduced limitations were not present (claims 17-22) at the time of the preceding action. For this reason it is proper to make the present action FINAL.

### ***Claim Objections***

5. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not). Claim 17 was withdrawn in the previous action, and therefore:

Misnumbered claims 17-22 have been renumbered claims 18-23.

6. For the remainder of this office action, claim 17 will be referred to as claim 18, claim 18 will be referred to as claim 19, claim 19 will be referred to as claim 20, claim 20 will be referred to as claim 21, claim 21 will be referred to as claim 22, and claim 22 will be referred to as claim 23.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7, 9, and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (US 4,098,941) and further in view of Glück et al. (US 6,340,713).

3. Johnson teaches molten polystyrene polymer products which are produced by incorporating a foaming agent into a pelletized solid thermoplastic material (pelletized polystyrene, column 5, lines 29-30) (rendering the material expandable) (column 5, lines 20-22). The polymer further comprises an absorbent such as alumina, clay, silica, or activated carbon (graphite) (column 5, lines 20-23 and 38-42) in an amount of 0.1 to 15%, preferably 0.5 to 10%, and up to 30% by weight of the polymer (column 5, lines 42-45). The foaming agent is present in an amount of 0.1 to 15% by weight based on

the polystyrene to be expanded (column 5, line 68 to column 6, line 2). The absorbent may have a particle size of 200 mesh or below (74 microns or below) (column 5, lines 45-47).

4. The amount of absorbent of Johnson overlaps the amount of filler in instant claim 7. The amount of blowing agent of Johnson overlaps the amount of blowing agent of instant claim 9. The particle size of the absorbent overlaps the particle size of the filler of instant claim 21. It is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a *prima facie* case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

5. Johnson does not expressly teach using a combination of the listed absorbents, such as silica or alumina and activated carbon (graphite). However, “it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art.” *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

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6. Claims 8 and 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (US 4,098,941) and further in view of Glück et al. (US 6,340,713) and Tung et al. (US 6,214,897).

7. Johnson teaches the molten polystyrene polymer products as applied to claim 7, but does not expressly teach that the polymer further comprises from 2 to 40% by weight of expandable graphite with an average particle size from 10 to 1000 µm.

8. However, Glück et al. teach expandable styrene polymers comprising graphite particles (column 2, lines 1-6). The styrene polymers may comprise expandable particles (column 4, lines 3-5). The graphite used has a mean particles size of from 1 to 50 µm (column 2, line 36-37). The graphite particles are preferably present in the styrene polymer in amounts of from 0.05% to 25% by weight (column 2, lines 40-42). The expandable styrene polymers further comprise from 3 to 10% by weight, based on the weight of the polymer, of a blowing agent (column 3, lines 61-62).

9. It would have been obvious for one of ordinary skill in the art at the time the invention was made to use graphite particles, as taught by Glück et al., in the palletized thermoplastic polymer (styrene) of Johnson because the expandable products of Glück et al. which contain graphite particles have reduced thermal conductivity (column 4, lines 20-23). Furthermore, when moldings are formed from the expandable styrene polymers of Glück et al., the addition of graphite particles to the polymers leads to a shortening of from 10 to 90% in the cooling time until welded materials can be removed from the mold (column 4, lines 13-16).

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10. Glück et al. teach do not expressly teach that the graphite is expandable. However, Tung et al. teach a foamable polymer composition comprising 1 to 10 parts by weight blowing agent (based on 100 parts by weight polymer composition) (column 10, lines 26-30), 0 to 60 parts by weight (based on 100 parts polymer composition) of a filler such as a silicate filler, aluminum oxides, chalk, or clay (column 10, lines 55-65), and a flame retardant such as phosphates, red phosphorous (column 10, lines 42-43), expandable graphite (column 10, line 49), or mixtures thereof (column 10, lines 50-54).
11. It would have been obvious to one of ordinary skill in the art to use expandable graphite and phosphates as taught by Tung et al. for use in the compositions of Glück et al. and Johnson in order to enhance the flame retardant properties of the styrene products (Tung et al., column 10, lines 36-37).

#### ***Response to Arguments***

12. Applicant's arguments filed October 23, 2009 have been fully considered but they are not persuasive.
13. Applicant argues that the references, alone or in combination, do not described or suggest the *expandable palletized thermoplastic polymer material* which comprise from 5 to 50 by weight of one or more fillers selected from the group consisting of talc, chalk, aluminum hydroxide, aluminum nitrate, aluminum silicate, calcium carbonate, calcium sulfate, silica, powdered quartz, Aerosil, alumia and glass beads.
14. Applicant's argument is not persuasive. As described above, Johnson teaches molten polystyrene polymer products which are produced by incorporating a foaming

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agent into a pelletized solid thermoplastic material (pelletized polystyrene, column 5, lines 29-30) (rendering the material expandable) (column 5, lines 20-22). The polymer further comprises an absorbent such as alumina, clay, silica, or activated carbon (graphite) (column 5, lines 20-23 and 38-42) in an amount of 0.1 to 15%, preferably 0.5 to 10%, and up to 30% by weight of the polymer (column 5, lines 42-45). The foaming agent is present in an amount of 0.1 to 15% by weight based on the polystyrene to be expanded (column 5, line 68 to column 6, line 2). The absorbent may have a particle size of 200 mesh or below (74 microns or below) (column 5, lines 45-47). Polystyrene particles are, by nature, rendered expandable by incorporation of a blowing agent.

Activation of the blowing agent causes the particles to expand and form a porous product such as foam.

15. Applicant argues that there is no teaching, suggestion, or motivation or a “reason that would have prompted a person of ordinary skill in the art in the relevant field to combine the elements in the way the claimed new invention does.” Applicants sites *KSR International Co. v. Teleflex Inc.*, *Graham v. John Deer Co. of Kansas City*, and *Takeda Chem. Industry v. Alphapharm Pty. Ltd.*, and *Ex parte Martin Haubner and Rolf Pinkos* to support their position saying, that the examiner bears the initial burden of presenting a case of *prima facie* obviousness.

16. Applicants' argument is not persuasive. As described above, while Johnson does not expressly teach using a combination of the listed absorbents, such as silica or alumina and activated carbon (graphite), it is well settled that it is *prima facie* obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the

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same purpose, *In re Lindner* 457 F.2d 506, 509, 173 USPQ 356, 359 (CCPA 1972).

Furthermore, “it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art.” *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

17. In the instant case, Johnson teaches palletized thermoplastic polymer (such as styrene polymer) with an absorbent which may comprise alumina, silica, or activated carbon (graphite). According to *In re Lindner* 457 F.2d 506, 509, 173 USPQ 356, 359 (CCPA 1972), because of all these are listed, using them in combination as absorbents would be obvious to one of ordinary skill in the art, and therefore, Johnson satisfies claims 7, 9 and 18-22 and in combination with Glück et al. (which is used to teach graphite with a mean particles size of from 1 to 50 µm (column 2, line 36-37) present in the styrene polymer in amounts of from 0.05% to 25% by weight) and Tung et al. (US 6,214,897) (which teaches expandable graphite and red phosphorus incorporated into styrene polymers) satisfies instant claims 8 and 23.

18. Applicant further argues that the present invention provides expandable palletized thermoplastic polymer materials which, at high filler contents, can be prefoamed to give predominantly closed-cell foam beads, and can be fused to yield moldable-foam moldings. Applicant further states that even with the addiction of the presence of fillers, the inventive moldable foam moldings have a high proportion of closed cells, e.g., more than 60% of the cells of the individual foam beads generally

being of closed-cell type. Applicant points to page 3, lines 1-14 of the instant specification.

19. In response to applicant's argument that the references fail to show these certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the moldable foam moldings in which more than 60% of the individual foam beads being of the closed cell type) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

20. Applicant further argues that Johnson is not concerned at all with the object of the present invention and instead, the reference describes controlling the cooling conditions of a particular thermoplastic, polystyrene foam, so as to greatly enhance the material's strength properties. Applicant asserts that in particular, the reference refers to "a means for the production of a polystyrene foam extrudate wherein the temperature of the cooling fluid, and thus the cooled extrudate may be very precisely controlled" (Column 2, lines 24-30). Further, the reference does not describe a composition that incorporates the claimed fillers and content thereof.

21. Applicants' argument is not persuasive. Although Johnson uses pelletized thermoplastic, such as styrene, comprising absorbent(s) (fillers) such as alumina, silica, or activated carbon (graphite) in a different capacity than applicant, case law holds that it "does not alter the conclusion that its use in a prior art composition would have been *prima facie* obvious from the purpose disclosed in the reference." *In re Linter*, 458 F.2d

1013, 173 USPQ 560 (CCPA 1972). While the motivation of Johnson may not be the same motivation as in the present invention, it is noted that obviousness under 103 is not negated because the motivation to arrive at the claimed invention as disclosed by the prior art does not agree with appellant's motivation. *In re Dillon*, 16 USPQ2d 1897 (Fed. Cir. 1990), *In re Tomlinson*, 150 USPQ 623 (CCPA 1996).

22. With regards to the applicants' arguments with regards to Glück et al. and Tung et al. not curing the deficiencies of Johnson, for the reasons specified above, the arguments with regards to Johnson are not persuasive. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Note that while Glück et al. and Tung et al. do not disclose all the features of the present claimed invention, Glück et al. and Tung et al. are used as teaching references, and therefore, it is not necessary for these secondary references to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather these reference teaches certain concepts, and in combination with the primary reference, discloses the presently claimed invention.

23. Applicants' further argue that Tung et al. describe semi-crystalline polycondensed branched polyesterpolymer blended with an aromatic polycarbonate, with the possible incorporation of several types of additives in the mixed compositions.

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24. Applicants' attention is drawn to column 3, lines 25-30 in which Tung et al. describe the basis of their invention: a foamable composition comprising a polymer composition, a blowing agent, and other optional additives. The polymer comprises a closed cell thermoplastic and pelletizing the thermoplastic (column 3, lines 42-45). The thermoplastics may comprise polystyrene (column 12, line 10). All three of the references are from the same field of endeavor, pelletized thermoplastic polymers (which may all comprise polystyrene) comprising fillers (including those taught in instant claim 7) and blowing agents. The composition of Tung et al. is therefore not an entirely different composition and therefore it would be obvious for one of ordinary skill in the art to look to Tung et al. for modifications of Johnson or Glück et al. Again, it is noted that while Tung et al. do not disclose all the features of the presently claimed invention, Tung et al. are used as teaching references, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, (expandable graphite filler used in a thermoplastic palletized material) and in combination with the primary reference, discloses the presently claimed invention.

25. With regards to applicants' argument that the foams of Glück et al. are self-extinguishing and there is therefore no apparent reason to modify the references for flame retardant purposes, Glück et al. expressly teaches that the expandable styrene particles of the invention may contain customary known additives such as flame retardants. Tung et al. teaches that expandable graphite may be used to impart flame

retardant properties to foamable compositions comprising pelletized thermoplastic (which may comprise polystyrene), blowing agents, and other additives. Therefore, it would be obvious to one of ordinary skill in the art to modify the compositions of Johnson and Glück et al. by using the flame retardants of Tung et al.

***Conclusion***

26. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

27. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARA NEGRELLI whose telephone number is (571)270-7338. The examiner can normally be reached on Monday through Friday 8:00 am EST to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571)272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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